

STATE OF VERMONT  
PUBLIC SERVICE BOARD

Docket No. 7101

Petition of Central Vermont Public Service )  
Corporation pursuant to 30 V.S.A. §248(j) for a )  
Certificate of Public Good authorizing )  
reconstruction and expansion of the Stratton )  
substation in Winhall, Vermont, including the )  
installation of a new 15 MVA transformer, and )  
an additional distribution circuit, to )  
accommodate planned growth at the Stratton ski )  
area )

Order entered: 3/8/2006

**I. INTRODUCTION**

This case involves a petition filed by Central Vermont Public Service Corporation ("CVPS") with the Vermont Public Service Board ("Board") on July 27, 2005, requesting a certificate of public good ("CPG"), pursuant to 30 V.S.A. § 248(j), in connection with CVPS' proposed reconstruction and expansion of the Stratton substation in Winhall, Vermont.

On August 15, 2005, Board staff requested further information from CVPS regarding the petition. CVPS provided the additional information on August 31, 2005.

Notice of the filing was sent on September 29, 2005, to all parties specified in 30 V.S.A. § 248(a)(4)(c) and all other interested parties. The notice stated that any party wishing to submit comments as to whether the petition raises a significant issue with respect to the substantive criteria of 30 V.S.A. § 248 needed to file such comments with the Board by October 31, 2005.

Notice of the filing was published in the *Bennington Banner* on October 3 and October 10, 2005. The notice requested comment by October 31, 2005, as to whether the petition raised a significant issue with respect to the substantive criteria of 30 V.S.A. § 248.

The Vermont Department of Public Service ("Department") was the only entity to file comments on the Petition by the deadline. The Department states that "due to the size and scope

of this project that it would ordinarily have recommended a § 248 rather than a § 248(j) proceeding."<sup>1</sup> However, the Department further states that it:

believes that there was a thorough examination of the need for this project in the ASC [Area Specific Collaborative] process under Docket No. 6806. In addition, sufficient information is provided in the record such that a hearing would not have been necessary and the Stratton substation has existed at the same site for several decades and is in a remote location such that its potential impact upon the public is limited.

On November 22, 2005, the Board issued a letter notifying CVPS that it would not accept the filing under the expedited review procedures of Section 248(j). The Board requested that CVPS provide notice of the proposed Project to the adjoining landowners, Jerry and Diane Brophy.

A prehearing conference was held on December 16, 2005. Appearances were entered for the Department by James Porter III, Esq.<sup>2</sup>, and for CVPS by Kenneth C. Picton, Esq. A site visit and public hearing were held on February 2, 2006. Mr. Brophy attended the public hearing but chose not to provide any comments. No party moved to intervene in this case.

A technical hearing was held on February 24, 2006, at which the prefiled testimony and exhibits were entered into the record by stipulation.

I have reviewed the Petition and supporting filings and conclude that the proposed reconstruction and expansion of the Stratton substation is in the public good, and recommend that the Board issue a certificate of public good to that effect. I hereby report the following findings and conclusions to the Board in accordance with 30 V.S.A. § 8.

## **II. FINDINGS**

1. The Stratton substation has been in existence since 1968, and first consisted of a single-transformer, two-circuit, distribution substation with a 10 MVA transformer. The 46 kV structure is a "Pittsford Type" pulloff steel lattice structure. The lattice structure does not easily

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1. The Department acknowledges that it failed to file comments on this issue in response to Board staff's August 15 memorandum.

2. On February 17, 2006, the Department filed a motion for Mr. Porter to appear pursuant to Board Rule 2.201(C). At the technical hearing, CVPS indicated that it does not oppose the motion. I hereby grant the motion.

allow for expansion of the 46 kV bus for a capacitor bank, second power transformer, or other additions to the substation. Watts pf. at 1.

2. In 1984, the substation was upgraded to allow for an additional capacitor bank, second transformer, and additional distribution circuit. The 1984 upgrade consisted of wood pole construction to create a 46 kV bus. The second transformer was placed on wood cribbing and the distribution bay built with wood poles and timbers for holding the new switches, disconnects, buswork and line pulloff. Additional upgrades were completed in 1998, and consisted of replacing the conduit buswork, regulators and single-blade disconnects. Watts pf. at 1; exhs. DWG-1 through DWG-4.

3. CVPS is proposing to remove all existing wood and steel structures and foundations from the substation. The fence yard would be expanded from an existing size of approximately 65 by 58 feet to 128 by 110 feet. Watts pf. at 2

4. The 46 kV high side will consist of two bays of 46 kV steel structures to accommodate the incoming lines, a 46 kV bus tie switch, and two power transformers (one 10 MVA and one 15 MVA) with high-side circuit switcher protection. The existing 5.4 MVAR capacitor bank will be reconnected with a new 46 kV circuit breaker for protection and switching. The two transformers will have a common oil containment and a 12.5 kV load break switch for each transformer. The new 12.5 kV portion of the substation will consist of four new circuits (instead of the current three) with standard voltage regulators, 12.5 kV circuit breakers, disconnects, and bus-side load-break switch to allow transformer maintenance and back-up. Watts pf. at 2; Upton supp. pf. at 1; exhs. DGW-5 through DWG-7.

5. The new 46 kV and 12.5 kV structures are proposed to be approximately 25 feet in height, the same as the existing 46 kV steel structure and capacitor bank and shorter than the existing 50- and 55-foot wood poles. The control building is proposed to be 18 by 24 feet in size and would house all the new relays, batteries, AC/DC panels, SCADA, and other control devices. The control building would be located in the southeast corner of the new fence line. Watts pf. at 2; exh. DGW-6.

6. The expansion of the substation yard will require excavating approximately 30 feet on each side of the substation, including excavation into an earth embankment behind the substation

for a distance of 30 feet. The substation yard would be expanded 20 feet in the front of the substation, and the grade would be lowered approximately two feet in elevation. In total, approximately 3,000 cubic yards of fill material from the bank would be removed. Of this material, approximately 400 to 500 cubic yards would be used to create a berm on the east side of the substation (which would be at least three feet in height) and another 300 to 400 cubic yards would be used for relocating the Stratton access road. Watts pf. at 2; Upton supp. pf. at 1.

7. The proposed Project is designed to improve safety and operating conditions at the existing substation, and to allow for planned growth at the Stratton ski area. Watts pf. at 3; Jones pf. at 3–4.

### **Orderly Development of the Region**

[30 V.S.A. § 248(b)(1)]

8. The proposed Project will not unduly interfere with the orderly development of the region, with due consideration having been given to the recommendations of the municipal and regional planning commissions, the recommendations of municipal legislative bodies, and the land conservation measures contained in the plan of the affected municipality. This finding is supported by findings 9 through 11, below.

9. The proposed Project involves the reconstruction of an existing substation. Capacity upgrades are necessary to accommodate planned growth at the existing ski area. Upton pf. at 1–2; Jones pf. at 3; exh. KLJ-2 at 3.

10. The proposed Project will not impact any land conservation measures included in the Winhall Town Plan. The Plan calls for construction to be "carried out in a manner which minimizes the fragmentation of forest blocs associated with critical deer, bear, and other wildlife habitat and maintains the connecting links between such blocs; cluster development is encouraged where it can accomplish these objectives." The proposed Project has been designed, with input from the Vermont Department of Fish and Wildlife, to avoid impacts to black bear habitat. It also includes the installation of screening between the new substation and neighboring residence. Upton pf. at 1–2; exh. TOU-2.

11. The Winhall Planning Commission, the Winhall Selectboard, and the Windham Regional Commission were provided with a description of the proposed Project and construction plans. No changes were recommended by these entities. Upton pf. at 2.

**Need for Present and Future Demand for Service**

[30 V.S.A. § 248(b)(2)]

12. The proposed Project is required to meet the need for present and future demand for service which could not otherwise be provided in a more cost-effective manner through energy conservation programs and measures and energy-efficiency and load management measures. This finding is supported by findings 13 through 16, below.

13. The existing substation configuration is outdated and needs to be reconstructed due to safety, liability, and reliability concerns. Even if an upgrade were not required due to increased load in the area, the substation would need to be replaced with a new facility of equivalent capacity to address such concerns. Watts pf. at 1; exhs. KLJ-1 and KLJ-2.

14. Because the Southern Loop load is approaching the limits of its capacity, the addition of load to the Stratton Distribution DUP Target Area could have an adverse impact on the reliability of the Southern Loop. Exh. KLJ-2 at 4–5.

15. As part of the ASC process, CVPS conducted an analysis of distributed resource alternatives to the proposed Project ("DUP analysis") that showed that the proposed capacity upgrades were appropriate. A more in-depth analysis using different assumptions and methods is unlikely to lead to a decision other than to reconstruct the substation with the proposed capacity upgrades. Jones pf. at 5; exh. KLJ-2 at 3.

16. The proposed Project is required to meet the need for present and future demand for service which could not otherwise be provided in a more cost-effective manner through energy conservation programs and measures and efficiency and load management measures. Further DUP analysis is not necessary to support this conclusion. Exh. KLJ-2 at 5–6.

**System Stability and Reliability**

[30 V.S.A. § 248(b)(3)]

17. The proposed Project will improve system stability and reliability. Enhanced fault protection and clearing will improve service reliability and improved stability. Proposed switching arrangements will allow for uninterrupted service during maintenance of individual equipment components. Stacom pf. at 1–2.

**Economic Benefit to the State**

[30 V.S.A. § 248(b)(4)]

18. The proposed Project will result in an economic benefit to the State. This finding is supported by findings 19 through 22, below.

19. The total construction cost for the proposed Project is estimated at \$1,323,000. Watts pf. at 2–3.

20. The incremental cost for the capacity upgrades related to the Stratton ski area is estimated at \$295,000. Jones pf. at 5–6; exh. KLJ-2 at 2.

21. The ASC Stipulation provides:

Stratton Corporation agrees to pay CVPS for the actual cost, inclusive of overheads, of the incremental capacity at the proposed Stratton Distribution Substation to be constructed and commissioned in order to serve Stratton's growth and development plans. The amount of this payment will be adjusted to include a tax assessment equal to the liability to CVPS for applicable federal and state income taxes arising from Central Vermont's receipt of the payment. Prior to the commencement of construction of the reconstructed substation and upon issuance of the required certificate of public good, Stratton shall post a bond payable to CVPS equal to the estimated amount of this payment. Stratton shall pay the full amount of the cost of the incremental capacity, adjusted for tax liability as stated above, to CVPS upon completion of construction.

Exh. KLJ-2 at 3.

22. The proposed Project benefits CVPS customers by providing increased reliability and uninterrupted service during maintenance activities. Stacom pf. at 1–2.

**Aesthetics, Historic Sites, Air and Water Purity,  
the Natural Environment and Public Health and Safety**

[30 V.S.A. § 248(b)(5)]

23. The modifications as proposed will not have an undue adverse effect on aesthetics, historic sites, air and water purity, the natural environment and public health and safety. This finding is supported by findings 24 through 49 below, which are the criteria specified in 10 V.S.A. §§ 1424(a)(d) and 6086(a)(1)-(8)(a) and (9)(k).

**Outstanding Resource Waters**

[10 V.S.A. § 1424(a)(d)]

24. The proposed Project is not located on or near any Outstanding Resource Waters. Upton pf. at 9.

**Water and Air Pollution**

[10 V.S.A. § 6086(a)(1)]

25. The proposed Project will not result in unreasonable air or water pollution. This finding is supported by findings 26 through 38, below.

26. Brush cleared from the site will be chipped on site and hauled away for reuse. No burning will take place. Upton pf. at 3.

27. The proposed Project will include the installation of breakers containing Sulfur hexafluoride (SF<sub>6</sub>), a greenhouse gas, as an insulating medium. Vacuum-type breakers, while preferred, are not available at voltages above 34 kV. Upton pf. at 3–4.

28. On the infrequent occasions where breaker maintenance activities require gas removal, CVPS uses a "gas cart" to capture and reuse the gas, rather than release it to the environment. CPVS participates in the U.S. Environmental Protection Agency's voluntary "SF<sub>6</sub> Emission Reduction Partnership for Electric Power Systems." Upton pf. at 3–4.

**Headwaters**

[10 V.S.A. § 6086(a)(1)(A)]

29. The proposed Project is located in a headwaters area. However, the only significant surface water feature near the project site is a man-made holding pond connected with Stratton ski area's wastewater disposal system. This pond is located uphill of the site and will not be impacted by construction. Upton pf. at 4.

**Waste Disposal**

[10 V.S.A. § 6086(a)(1)(B)]

30. The proposed Project will meet applicable health and environmental conservation regulations regarding the disposal of wastes. This finding is supported by findings 31 through 34, below.

31. There will be no disposal of any waste material into surface or groundwater. Upton pf. at 4.

32. The proposed Project will include the installation of a new oil containment system for the substation transformers. The oil containment system would meet the IEEE guidelines for such systems. The containment system would consist of a containment pit, filled with crushed stone and surrounded by an impervious liner, with an 18-inch-diameter perforated drain pipe running from the foundation pad through the pit and liner. The pipe would allow water to move through the containment structure continuously. At the bottom of the pipe would be polymer beads which allow the passage of water but solidify upon contact with oil, preventing the further migration of any liquid out of the containment structure. The structure has been designed to contain approximately 150% of the volume of oil in the transformer. Upton pf. at 5; Upton supp. pf. at 1–2; Watts pf. at 2; exh. DGW-7.

33. The proposed Project will involve the removal of concrete foundations in the existing substation yard. This material will be reused on-site in accordance with Vermont Solid Waste Management Rules, or disposed of by a licensed waste hauler, as appropriate. Upton pf. at 4.

34. Because of site topography there will be little surface water runoff from the property. A stone-lined drainage ditch will be installed around the fence, and sediment barriers will be



installed during construction and maintained until the site has been adequately revegetated. Upton pf. at 4–5; exh. DGW-5.

**Water Conservation**

[10 V.S.A. § 6086(a)(1)(C)]

35. The proposed Project will not require the use of water. Upton pf. at 5.

**Floodways, Streams, and Shorelines**

[10 V.S.A. §§ 6086(a)(1)(D)(E) &(F)]

36. The proposed Project is not located on or adjacent to any floodways or streams. The lot is located near a man-made pond, which is part of the Stratton ski area's wastewater disposal system. The substation is located directly downhill from the pond, and the proposed Project will not have an impact on the shoreline. Upton pf. at 5.

**Wetlands**

[10 V.S.A. § 6086(a)(1)(G)]

37. There are no Class I or Class II wetlands near the proposed Project. Upton pf. at 5; exh. TOU-1.

**Sufficiency of Water and Burden on Existing Water Supply**

[10 V.S.A. §§ 6086(a)(2)&(3)]

38. The proposed Project will not require the use of water and will not place a burden on any existing water supply. The proposed Project is located within the Wellhead Protection Area of Winhall-Stratton Fire District #1. A substation already exists on the site, and the proposed construction would involve the installation of oil containment for the substation transformers, which will reduce the potential for surface and groundwater contamination. Consequently, the existing protection plan should not need to be updated. Upton pf. at 5; exh. TOU-1.

**Soil Erosion**

[10 V.S.A. § 6086(a)(4)]

39. The proposed Project will not result in unreasonable soil erosion or reduce the ability of the land to hold water. Erosion and sediment control measures, including silt fencing and stone-lined drainage trenches, will prevent erosion during and after construction. Upton pf. at 6.

40. Currently, water sheets over the substation yard toward the southeast corner of the adjoining landowner's lot. The proposed substation design includes drainage swales that will direct some of this existing runoff to the other side of Mountain View Road through a new culvert. Exh. TOU-3

**Transportation Systems**

[10 V.S.A. § 6086(a)(5)]

41. The proposed Project will not cause unreasonable congestion or unsafe conditions with respect to transportation systems. Upton pf. at 6.

**Educational and Municipal Services**

[10 V.S.A. § 6086(a)(6) and (7)]

42. The proposed Project will not cause an unreasonable burden on the ability of the Town of Winhall to provide education or municipal services. Upton pf. at 6–7.

**Aesthetics, Historic Sites  
and Rare and Irreplaceable Natural Areas**

[10 V.S.A. § 6086(a)(8)]

43. The proposed Project will not have an undue adverse impact on aesthetics, historic sites, or rare and irreplaceable natural areas. This finding is supported by findings 43 through 47, below.

44. The proposed Project involves the reconstruction and expansion of the existing Stratton substation at a relatively isolated location. Upton pf. at 8; exhs. DGW-5 and DGW-6.

45. The new substation would have a larger footprint, but the overall appearance and profile would be similar to the existing steel structures. Watts pf. at 2; exhs. DGW-5 and DGW-6.

46. The area around the substation consists primarily of forest, a 46 kV transmission line, and a holding pond for the wastewater treatment system for the Stratton ski area. The nearest public road is the Stratton Mountain Access Road. The substation is not visible from this road, or from any other public vantage point. There are several homes along Mountain View Road (a private road), east of the substation. Almost all of them are located in a forested area and are screened by trees and topography from the substation site. Upton pf. at 8.

47. Jerry and Diane Brophy own a vacation home, built after the substation, that can be seen from the substation lot. The proposed Project will involve the clearing of poplars and other hardwoods between the substation and the home. CVPS initially proposed installing new landscaping atop a berm on the east side of the substation, at the edge of CPVS' property, in the form of a line of spruce trees at least four feet in height. This would create a more solid year-round screen. Upton pf. at 8–9.

48. Discussions between the Brophys and CVPS have resulted in the following conclusions:

- The Brophys already have several spruce trees planted near the house;
- Expanding these plantings may result in more effective aesthetic mitigation than the installation of a berm and plantings on CVPS' property; and
- The Brophys would prefer to retain a landscape architect after the substation is built, to assess the site and determine the best course of action.

Exh. TOU-3.

49. The area directly in front of the substation will be occupied by poles, anchors, switch handles, and the swing areas for gates, therefore offering limited opportunity for plantings. Exh. TOU-3.

50. There are no known rare or irreplaceable natural areas or historic sites in the area of the proposed Project. Upton pf. at 9; exh. TOU-1.

### **Discussion**

Based on the above finding, I find that the proposed project will not have an undue adverse effect on the aesthetics or scenic and natural beauty of the area.

The Board has relied on the Environmental Board's methodology for determination of "undue" adverse effects on aesthetics and scenic and natural beauty as outlined in the so-called Quechee Lakes decision. Quechee Lakes Corporation, #3W0411-EB and 3W0439-EB, dated January 13, 1986. As required by this decision, it is first appropriate to determine if the impact of the project will be adverse. The project would have an adverse impact on the aesthetics of the area if its design is out of context or not in harmony with the area in which it is located. If it is found that the impact would be adverse, it is then necessary to determine that such an impact would be "undue." Such a finding would be required if the project violates a clear written community standard intended to preserve the aesthetics or scenic beauty of the area, if it would offend the sensibilities of the average person, or if generally available mitigating steps would not be taken to improve the harmony of the project with its surroundings. The Board's assessment of whether a particular project will have an "undue" adverse effect based on these standards should be significantly informed by the overall societal benefits of the project.<sup>3</sup>

The evidence indicates that the aesthetic impact of the proposed substation will be minimal with respect to views from public areas. There is one home near the substation — the Brophys — that may be impacted by the proposed reconstruction. CVPS and the Brophys have proposed that the Board require a post-construction planting plan for approval by the Board, rather than approving a specific aesthetic mitigation plan at this time. The optimal aesthetic mitigation for the site would involve plantings on the adjoining land. The Brophys are willing to consider this approach and, therefore, I recommend that the Board adopt this proposal. However, the Board should also ensure that construction activities at the site are performed in such a way as to allow the installation of a berm between the substation and the adjoining home, if the Brophys determine that they will not allow plantings on their land. In the event that such a situation does occur, CVPS has agreed to consider increasing the size of the berm beyond what was originally proposed.

As part of the post-construction aesthetic mitigation plans, CVPS has also agreed to consider installing plantings along the front of the substation and utilizing plastic fence inserts. I

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3. Docket 6884, Order of 4/21/04 at 20-21.

recommend that the Board require CVPS to file post-construction aesthetic mitigation plans in accordance with this discussion within two months of completion of the proposed Project.

**Necessary Wildlife Habitat and Endangered Species**

[10 V.S.A. § 6086(a)(8)(A)]

51. The proposed Project will not impact any necessary wildlife habitat or affect any known sites containing endangered species. Reconstruction of the substation on the existing lot will avoid impacts to black bear production habitat. Upton pf. at 9; exh. TOU-2.

**Development Affecting Public Investments**

[10 V.S.A. § 6086(a)(9)(K)]

52. The proposed Project will not unnecessarily or unreasonably endanger the public or quasi-public investments in any governmental public utility facilities, services, or lands, or materially jeopardize or interfere with the function, efficiency, or safety of the public's use or enjoyment of or access to such facilities, services, or lands. Upton pf. at 10.

**Least-Cost Integrated Resource Plan**

[30 V.S.A. § 248(b)(6)]

53. The proposed Project is consistent with the principles for resource selection in accordance with CVPS's approved least-cost integrated plan. The proposed Project, including capacity upgrades, is necessary, and represents the most cost-effective solution to safety, operational, and capacity constraints at the existing facility. Watts pf. at 3; Jones pf. at 5; exh. KLJ-2 at 2–6.

**Compliance with Electric Energy Plan**

[30 V.S.A. § 248(b)(7)]

54. The proposed Project is consistent with the 2005 Vermont Twenty-Year Electric Plan. Watts pf. at 3; letter of November 1, 2005, from James Porter, Esq., to Kenneth Picton, Esq.

**Outstanding Resource Waters**

[30 V.S.A. § 248(b)(8)]

55. The proposed Project is not located on or near any Outstanding Resource Waters. Upton pf. at 9.

**Existing or Planned Transmission Facilities**

[30 V.S.A. § 248(b)(10)]

56. The proposed Project can be served economically by existing transmission facilities without undue adverse effect on Vermont utilities or customers. Watts pf. at 3.

**III. CONCLUSION**

I conclude that the proposed reconstruction and expansion of the Stratton substation is in the public good, and recommend that the Board issue a certificate of public good to that effect. All parties have waived the opportunity to comment on this proposal for decision, pursuant to 3 V.S.A. § 811.

DATED at Montpelier, Vermont this 8<sup>th</sup> day of March, 2006.

s/Ed McNamara  
Ed McNamara, Esq.  
Hearing Officer

**IV. ORDER**

IT IS HEREBY ORDERED, ADJUDGED AND DECREED by the Public Service Board of the State of Vermont that the proposed modifications, in accordance with the evidence and plans presented in this proceeding, will promote the general good of the State of Vermont in accordance with 30 V.S.A. Section 248, and a certificate of public good shall be issued in the matter.

1. The findings and conclusions of the Hearing Officer are adopted.
2. Within two months of completion of the proposed Project, CVPS must file post-construction aesthetic mitigation plans with the Board for approval. The Board retains authority to require CVPS to implement additional aesthetic mitigation measures as the Board may determine to be necessary.

Dated at Montpelier, Vermont this 8<sup>th</sup> day of March, 2006.

<u>s/James Volz</u>	)	
	)	
	)	PUBLIC SERVICE
<u>s/David C. Coen</u>	)	
	)	BOARD
	)	
	)	OF VERMONT
<u>s/John D. Burke</u>	)	

OFFICE OF THE CLERK

FILED: March 8, 2006

ATTEST: s/Judith C. Whitney  
Deputy Clerk of the Board

*Notice to Readers: This decision is subject to revision of technical errors. Readers are requested to notify the Clerk of the Board (by e-mail, telephone, or in writing) of any apparent errors, in order that any necessary corrections may be made. (E-mail address: Clerk@psb.state.vt.us)*

*Appeal of this decision to the Supreme Court of Vermont must be filed with the Clerk of the Board within thirty days. Appeal will not stay the effect of this Order, absent further Order by this Board or appropriate action by the Supreme Court of Vermont. Motions for reconsideration or stay, if any, must be filed with the Clerk of the Board within ten days of the date of this decision and order.*